

26 as obvious based on the combination of Yamazaki, Shiratsuchi and U.S. Patent No. 5,487,953 to Shirota. Paragraph 12 of the Official Action rejects claim 27 as obvious based on the combination of Yamazaki, Shiratsuchi, Shirota and Sato. Initially, it does not appear that WO 2005/048222 to Yamazaki was cited by the Examiner on a Form PTO-892. The Applicant respectfully requests that the Examiner properly cite WO 2005/048222 to Yamazaki on a Form PTO-892.

In any event, please note that on June 30, 2010, the Applicant filed a Verified English Translation of the priority document, JP 2005-085056, which was filed March 23, 2005. Yamazaki has an international filing date of November 5, 2004, and published on May 26, 2005. As such, Yamazaki is only potentially available as prior art under § 102(e). However, Yamazaki, as a commonly owned reference under § 102(e), may not be considered for a rejection under § 103. Subject matter developed by another, which qualifies as prior art only under one or more of subsections 35 U.S.C. §§ 102(e), (f) and (g), is not to be considered when determining whether an invention sought to be patented is obvious under 35 U.S.C. § 103, provided the subject matter and the claimed invention were commonly owned at the time the invention was made. See MPEP § 2146. Since the disclosure by Yamazaki and the claimed invention of the present application were, at the time the invention was made, subject to an obligation of assignment to Semiconductor Energy Laboratory Co., Ltd., Yamazaki may not be considered for a rejection under § 103. Accordingly, reconsideration and withdrawal of the rejections under 35 U.S.C. § 103(a) are in order and respectfully requested.

Paragraph 14 of the Official Action rejects claims 13-15, 17, 18, 20 and 25-27 under the doctrine of obviousness-type double patenting over claims 1-10, 15 and 16 of U.S. Patent No. 7,732,808 to Ikeda and Shiratsuchi. Paragraph 15 of the Official Action rejects claims 13, 16, 19, 20 and 25-27 under the doctrine of obviousness-type double patenting over claims 1-10, 15 and 16 of Ikeda and Shirota. The Applicant respectfully submits that the subject application is patentably distinct from the claims of the Ikeda patent and Shiratsuchi or Shirota.

As stated in MPEP § 804, under the heading "Obviousness-Type," in order to form an obviousness-type double patenting rejection, a claim in the present application must define an invention that is merely an obvious variation of an invention claimed in the prior art patent, and the claimed subject matter must not be patentably distinct from the subject matter claimed in a commonly owned patent. Also, the specification and drawings of the patent principally underlying the double patenting rejection are not considered prior art.

With respect to the rejection based on Ikeda and Shiratsuchi, the Official Action concedes that Ikeda does not claim the carbazole compound claimed by the subject application and relies on Shiratsuchi to allegedly teach "carbazole compounds of instant general formulate (1), (2) with Ar of instant formula 2-1 (compound H-23, column 23), and (3) (compound H-38 column 29) with instant Ar 3-1 (compounds H-24, column 23) and as suitable compounds for the hole transport layer (column 13, line 12 to column 14, line 5) used in a photoelectric device (column 2, lines 12-16)" (page 11, Paper No. 20110610). The Official Action further asserts that "[t]he reference also teaches the carbazole compounds as equivalent and interchangeable with the hole transporting arylamine compounds of copending application (column 13, line 12 to column 14, line 5)" and that "[i]n view of Shiratsuchi et al.'s recognition that the carbazole compounds and the hole transporting compounds of patent are equivalent and interchangeable, it would have been obvious to one of ordinary skill in the art at the time of the invention to substitute the arylamine compounds of patent with carbazole compounds such as H-23, H-24, or H-38 taught by Shiratsuchi et al and thereby arrive at the present invention" (*Id.*) The Applicant respectfully disagrees and traverses the assertions of the Official Action.

Shiratsuchi does not describe that the asserted carbazole compounds are known equivalents to arylamine compounds of Ikeda, much less that there would have been a reasonable expectation of success in combining such carbazole compounds in a mixed layer with molybdenum oxide, as claimed by Ikeda. Moreover, neither Ikeda nor

Shiratsuchi provides any evidence that the combination of Shiratsuchi's H-23, H-24 or H-38 compounds in a mixed layer comprising molybdenum oxide either was a simple substitution or would have led to a predictable result. To the contrary, Shiratsuchi appears to be totally silent with respect to molybdenum oxide or application of the above-referenced compounds in combination with molybdenum oxide.

Under MPEP § 2144.06, in order to rely on equivalence as a rationale supporting an obviousness rejection, the equivalency must be recognized in the prior art, and cannot be based on applicant's disclosure or the mere fact that the components at issue are functional or mechanical equivalents. In re Ruff, 256 F.2d 590, 118 USPQ 340 (CCPA 1958). The Applicant respectfully submits that the equivalence of Shiratsuchi's H-23, H-24 or H-38 compounds with Ikeda's claimed aromatic amine compounds in a mixed layer also comprising molybdenum oxide is not recognized in the prior art.

Furthermore, with respect to the rejection based on Ikeda and Shirota, the Official Action concedes that Ikeda does not claim the carbazole compound claimed by the subject application and relies on Shirota to allegedly teach "carbazole compounds of instant general formula (4) as suitable compounds for the hole transport layer (column 4, lines 38-41, compound 3) used in a organic electroluminescent device (abstract)" (page 13, Paper No. 20110610). The Official Action continues, "[t]he reference teaches the compound to have high heat resistance capable enable [sic] high luminance with a high efficiency for a long time (column 1, lines 57-60)" and further asserts that "[i]t would be obvious to one of ordinary skill in the art at the time of the invention to combine the carbazole compounds of Shirota et al. with the device of patent ... to have high heat resistance capable enable [sic] high luminance with a high efficiency for a long time (column 1, lines 57-60)" (*Id.*). The Applicant respectfully disagrees and traverses the assertions of the Official Action.

It is respectfully submitted that the subject application clearly describes that it is an inorganic compound, not a carbazole derivative, which improves heat resistance of a light emitting element in the layer formed of the composite material (paragraph [0068] of

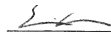
the published specification). While the Official Action alleges that it would have been obvious to combine Shirota's alleged carbazole with molybdenum oxide in a mixed layer claimed by Ikeda in order to obtain the advantage of increased heat resistance, it is respectfully submitted that Shirota does not teach that such an advantage can be obtained in a mixed layer of Ikeda or that the combination of the disclosed carbazole with molybdenum oxide would produce any advantage when compared with a mixed layer comprising molybdenum oxide and an aromatic amine. On the other hand, the present inventors have recognized the unobvious advantage, only achieved by the present invention, that if a carbazole derivative of low molecular material is used in the layer formed of the composite material, the inorganic compound can improve the heat resistance of the light emitting element.

It is respectfully submitted that the claims of the present application are not a timewise extension of the invention as claimed in the Ikeda patent, either alone or in combination with Shiratsuchi or Shirota. Reconsideration and withdrawal of the obviousness-type double patenting rejections are requested.

Should the Examiner believe that anything further would be desirable to place this application in better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

The Commissioner is hereby authorized to charge fees under 37 C.F.R. §§ 1.16, 1.17, 1.20(a), 1.20(b), 1.20(c), and 1.20(d) (except the Issue Fee) which may be required now or hereafter, or credit any overpayment to Deposit Account No. 50-2280.

Respectfully submitted,



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